

C. Remarks

The claims are 1, 3, 6-19, 21-23, 25-54 and 56-59, with claims 1, 27, 28, 54 and 56 being independent. Claims 28-54 and 56 have been withdrawn from consideration. Claims 1 and 27 have been amended to better define the present invention. Support for this amendment may be found throughout the specification and the drawings. Claim 25 has been amended to reflect the cancellation of claim 24. No new matter has been added. Reconsideration of the claims is expressly requested.

Under M.P.E.P. § 821.04, Applicants again request rejoinder of the claims of Group II, directed to the method of using the apparatus of Group I, in the event that the claims of Group I are allowed. If needed, Applicants request an opportunity to amend the claims of Group II to be commensurate in scope with claims allowed in Group I.

Claims 1, 3, 6-19, 21-27 and 57-59 stand rejected under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the written description and enablement requirements.

In response, without acquiescence and in order to expedite prosecution, Applicants have amended the independent claims to delete the subject matter to which the Examiner has objected. Accordingly, this rejection should be withdrawn.

Claim 24 is objected to due to an informality. This claim was cancelled by the previously-filed Amendment. The cancellation is now properly reflected in the listing of the claims in part B. above.

Claim 1, 3, 21-27 and 57 stand rejected under 35 U.S.C. § 103(a) as being allegedly obvious from U.S. Patent No. 6,610,258 B1 (Strobbel). Claims 6-19 stand rejected under 35 U.S.C. § 103(a) as being allegedly obvious from Strobbel in view of U.S.

Patent No. 3,924,139 (Hirose). Claims 27, 58 and 59 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,900,211 (Dunn). The grounds of rejection are respectfully traversed.

Prior to addressing the merits of rejection, Applicants would like to briefly review some of the key features and advantages of the presently claimed invention. The invention, as presently claimed, is directed to an apparatus, which is used to efficiently decompose halogenated aliphatic hydrocarbon pollutants using light. Importantly, this apparatus:

(a) includes a means for obtaining a processed gas by mixing a halogenated aliphatic hydrocarbon and gaseous chlorine;

(b) includes a reflecting plate for reflecting the light from a light source into the case containing the processed gas; and

(c) allows the decomposition of the processed gas to be conducted by irradiation with 300 nm to 500 nm light.

As a result, halogenated aliphatic hydrocarbon compounds can be decomposed efficiently by irradiating a gaseous mixture of these compounds and chlorine with 300 nm to 500 nm light. Using the light in this wavelength range has numerous benefits. Unlike UV light, which is shorter than 300 nm, the light that is from 300 nm to 500 nm is not harmful to living organisms. Therefore, unlike devices that utilize UV light, the presently claimed apparatus need not have any special protective means. Furthermore, using such light avoids the need for expensive quartz glass, which is used for UV irradiation. In the present invention, the container may be made, for example, from inexpensive conventional glass (see paragraph [0111]).

Strobbel is directed to a device for purifying a fluid with photonic pulses. Strobbel teaches that this fluid flows inside a quartz tube at the time it is irradiated with light. However, Strobbel fails to disclose or suggest a means for obtaining a processed gas by mixing a halogenated aliphatic hydrocarbon and gaseous chlorine, so that the decomposition of the processed gas can be performed using 300 nm to 500 nm light. The goal in Strobbel is to process a stream containing at least one liquid, which is clearly different from the apparatus as presently claimed, especially in connection with the means for obtaining the processed gas. Accordingly, Strobbel cannot affect the patentability of the presently claimed invention.

Hirose cannot provide the teachings missing in Strobbel. The disclosure in Hirose regarding purification of water does not suggest a means for preparing the processed gas as presently claimed. At most, Hirose teaches discharging oxygen gas into waste water, not mixing pollutants and gaseous chlorine. Furthermore, there is no motivation to modify Strobbel using the teachings in Hirose to arrive at the presently claimed invention.

Dunn is directed to deactivation of microorganisms using a light source, which emits high-intensity pulsed polychromatic light. However, like Strobbel, Dunn does not disclose or suggest a means for obtaining a processed gas by mixing a halogenated aliphatic hydrocarbon and gaseous chlorine, so that the decomposition of the processed gas can be performed using 300 nm to 500 nm light. Thus, Dunn cannot affect the patentability of the presently claimed invention.

In conclusion, Applicants respectfully submit that none of the cited

references, whether considered separately or in any proper combination, disclose or suggest all of the presently claimed elements, particularly the combination of elements (a)-(c) discussed above. Wherefore, Applicants respectfully request that the outstanding rejections be withdrawn and that the present case be passed to issue.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our address given below.

Respectfully submitted,



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